

ART III.—*Distorted Pebbles from Goat Island, Tasmania.*

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(With Plates III.-VI.)

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Near Ulverstone, on the North Coast of Tasmania, a small rocky peninsula juts out into the sea. At high water it becomes an island, known as Goat Island.

My attention was first directed to this locality by the late Mr. Twelvetrees, Government Geologist, who sent me a sample of the conglomerate. Since then I have visited the spot, where the conglomerate consists of quartz and quartzite pebbles of moderate size, embedded in a fine micaceous schist base. The only published reference to this locality that has come under my notice is in a paper by the late Mr. Twelvetrees, Government Geologist for Tasmania, entitled *Outlines of the Geology of Tasmania*, in Report of the Secretary for Mines for year 1908, published 1909, p. 118. Under the heading of Pre-Cambrian, locality Ulverstone and Forth, he states: "At the mouth of the River Leven, quartzitic and sericitic schists and schistose conglomerates, with beautifully stretched quartz pebbles, are well exposed along the beach eastward as far as Buttons Rivulet, where they are covered by basalt of Tertiary age, with a general strike of N.10°E.; and westward past Picnic Point to halfway across Barkworth's Bay, west of Goat Island, where their junction with the overlying Dundas and Leven Cambrians is hidden by a flow of lava. The striped slates and breccia a little further west appear with a strike of from N.15° to 25°W., showing their strongly unconformable position on the Algonkian schists. The schistose conglomerates on Goat Island furnish classical examples of dynamically deformed pebble beds, the quartz pebbles being stretched into lenticles and narrow strips without fracture. The strike of the schists west of Goat Island ranges from N.12° to 30°E., with a north-westerly dip."

During the period the conglomerate has existed, it has been subjected to all manner of strains and stresses that have left their impress on the pebbles, as shown in the illustrations.

No. 1 is attenuated to probably more than twice its original length. It is flattened as well as elongated, showing that it has been subjected to both tension and compression. Length, 10½ inches; breadth, 2 inches; thickness, ¾ inch.

No. 2 is a cylindrical pebble that has been elongated by tensile forces, but it has not been compressed like No. 1. On each end a small pebble of finer grained quartz is embodied. It was found



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